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Executive summary

Centralize multiple database instances and workloads
Supported 16 VMs running OLTP workloads in 8U

Run ecommerce applications efficiently
Handled 15,932 transactions per second

Deliver speedy analysis
Completed 60 OLAP query streams across 10 databases in 32 minutes

Expand your data center capabilities with software-defined Dell EMC hyperconverged infrastructure

An Intel Xeon Scalable processor-powered Dell EMC vSAN Ready Node solution delivered strong, reliable performance for database transaction processing and data analytics workloads

A digital infrastructure that meets today's challenges could falter as your organization grows. A new product launch, an unforeseen spike in your user base, or an expansion of services could burden your existing hardware and cause slowdowns that increase wait times and frustrate your customers. Running applications on a high-performance hyperconverged infrastructure (HCI) solution from Dell EMC™, Intel®, and VMware® could help database applications handle these growing pains without a large data center footprint.

In our data center, we tested the performance of an Intel® Xeon® Scalable processor-powered Dell EMC vSAN Ready Node™ HCI solution with multiple instances of online transaction processing (OLTP) and online analytical processing (OLAP) workloads. A solution that processes a high volume of database transactions could enable you to support a sizable user base (ecommerce customers, for example) or allow existing users to access your database without processing delays. Likewise, a solution that quickly completes analytics workloads could allow you to put relevant analysis into the hands of sales reps and senior management sooner so they can make timely, data-driven decisions. The Dell EMC, Intel, and VMware HCI solution delivered strong, reliable performance for both kinds of workloads.

How we tested

Our Dell EMC vSAN Ready Node solution comprised a cluster of four Dell EMC PowerEdge™ R740 servers powered by Intel Xeon Scalable Gold 6240 processors. Each node featured 72 CPU threads, 384 GB of RAM, and 3.8 TB of capacity-tier storage. Featuring VMware vSphere® Standard Edition™, VMware vSAN Standard, and VMware vCenter Server® Foundation™, the solution used Microsoft Windows Server 2019 Standard Edition for its operating system and Microsoft SQL Server 2019 Standard Edition for the databases.

With this Dell EMC vSAN Ready Node solution, organizations could:

Centralize multiple database instances and workloads
In our testing, the Intel Xeon Scalable processor-powered Dell EMC vSAN Ready Node solution supported 16 VMs running OLTP workloads or 10 VMs running OLAP workloads.

Help generate ecommerce revenue by processing many database transactions at once
While running our test workload, each of the 16 VMs in the Intel Xeon Scalable processor-powered Dell EMC vSAN Ready Node solution processed 995 database transactions per second (TPS) on average, totaling 15,932 TPS for the solution. We used a TPC-E-like workload from Benchmark Factory.

Make more timely decisions by running multiple analytics streams
For 10 VMs, the Intel Xeon Scalable processor-powered Dell EMC vSAN Ready Node solution processed six streams per VM across 10 databases in 32 minutes. We used a TPC-H-like workload from HammerDB that ran a stream of 22 serialized queries.

Conclusion

If your organization's data center has limited rack and floor space, choosing an Intel Xeon Scalable processor-powered Dell EMC vSAN Ready Node solution could help you grow, due to the strong performance we saw in our data center for OLTP and OLAP database applications. In addition to providing strong performance, this HCI solution could make your data center more efficient overall, performing a lot of work in a limited amount of physical space.

Read the report at http://facts.pt/0n1766h ▶

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